

- 4 a $\mu_{\hat{p}} = 0.9, \sigma_{\hat{p}} = \frac{3\sqrt{2}}{100}$
 b $\mu_{\hat{p}} = 0.9, \sigma_{\hat{p}} = 0.03$. No effect on mean; SD reduced.
- 5 a $\mu_{\bar{x}} = 600, \sigma_{\bar{x}} = \sqrt{30}$
 b $\mu_{\bar{x}} = 600, \sigma_{\bar{x}} = \sqrt{15}$. No effect on mean; SD reduced.
- 6 a $\mu_{\bar{x}} = 90.5, \sigma_{\bar{x}} = \frac{2\sqrt{15}}{3}$
 b $\mu_{\bar{x}} = 90.5, \sigma_{\bar{x}} = \frac{\sqrt{30}}{3}$. No effect on mean; SD reduced.
- 7 0.28
- 8 $\mu_{\hat{p}} = 0.3, \sigma_{\hat{p}} = \frac{\sqrt{210}}{100}$
- 9 0.67
- 10 $\mu_{\hat{p}} = 0.5, \sigma_{\hat{p}} = \frac{\sqrt{10}}{20}$
- 11 0.76, $\mu_{\hat{p}} = 0.5, \sigma_{\hat{p}} = \frac{\sqrt{5}}{20}$. No effect on mean; SD reduced.
- 12 0.93
- 13 $\mu_{\hat{p}} = 0.1, \sigma_{\hat{p}} = 0.09$
- 14 0.97, $\mu_{\hat{p}} = 0.1, \sigma_{\hat{p}} = 0.07$
- 15 $\mu_{\bar{x}} = 67, \sigma_{\bar{x}} = \frac{3\sqrt{5}}{2}$
- 16 57

